

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

**JEANETTE SCICCHITANO SMITH and
ALEXANDER SMITH**

Plaintiffs

v.

**SPECTRUM BRANDS, INC., SPECTRUM
BRANDS PET GROUP, INC., and UNITED
PET GROUP, INC.**

Defendants

**CIVIL ACTION NO.:
2:21-CV-04983-HB**

JURY TRIAL DEMANDED

**PLAINTIFFS' MEMORANDUM OF LAW IN SUPPORT OF THEIR RESPONSE IN
OPPOSITION TO DEFENDANTS' MOTION TO EXCLUDE EXPERT OPINIONS OF
CHRISTOPH J. FLAHERTY, P.E.**

Plaintiffs, Jeanette Scicchitano Smith and Alexander Smith, (hereinafter "Plaintiffs"), by and through their counsel, DE LUCA LEVINE LLC, hereby submit this Memorandum of Law in Support of their Response in Opposition to the Motion to Exclude the Expert Opinions of Christoph J. Flaherty, P.E. filed by Defendants, Spectrum Brands, Inc., Spectrum Brands Pet Group, Inc. and United Pet Group, Inc.; (hereinafter collectively "Spectrum Brands"); in support thereof, they aver as follows:

I. INTRODUCTION

This action arises from a fire that occurred at the home of Jeanette Scicchitano-Smith and Alexander Smith on November 3, 2019 while the Smiths were out of town. Plaintiff alleges that the fire began due to the failure of an aquarium pump motor designed, manufactured, and sold by Spectrum Brands. The pump overheated and ignited the aquarium's plastic top, causing \$500,000 of smoke and soot damage throughout the house before eventually burning itself out.

Spectrum Brands moves to preclude the testimony of Plaintiffs' forensic expert, Christoph

Flaherty. For the reasons that follow, the motion should be denied.

In the wake of the fire, Plaintiffs retained, among others, Mr. Flaherty – a licensed professional engineer who, after a career as a Nuclear Propulsion Engineer in the Navy, has more than 19 years of experience investigating the cause and origin of product failures and electrical fires. During the course of his investigation of the facts and circumstances of this fire, Mr. Flaherty reviewed, among others things, photographs of the fire scene, relevant deposition transcripts, witness statements, physical evidence recovered from the fire scene, x-rays of fire artifacts, and the design schematics of the pump motor in question.

The origin of this fire is not disputed. The fire ran out of fuel after consuming the aquarium's plastics and other combustible components. There were only three aquarium components that could have been the source of the fire: the heater, the light, and the pump motor. The light was unplugged and could not have caused the fire. The heater was largely intact and suffered damage consistent with being attacked from the fire and could not have caused the fire.

The pump motor, in contrast, evinced internal heat damage and evidence of arcing on its windings, which is consistent with a runaway thermal event caused by an internal failure of the motor. Mr. Flaherty considered and eliminated post-sale damage to the product caused by abnormal use and physical abuse as a potential cause of the runaway thermal event that occurred within the pump motor because the Smiths testified under oath that they used the product sparingly and only as intended throughout its lifetime. Mr. Flaherty also observed no other evidence anywhere in the record that would indicate that pump was misused or abused in any manner prior to its malfunction. Accordingly, Mr. Flaherty opined that the subject fire was caused by an unknown defect in the motor that caused it to overheat and ignite nearby combustibles.

Mr. Flaherty also concluded that the motor was defectively designed because it lacked

adequate thermal protection, which would have automatically prevented a runaway thermal event in the first place. The subject pump motor is a generic part, similar in size, design, and function to motors used in many other applications, such as bathroom ceiling exhaust fans or other types of pumps. Per Mr. Flaherty's extensive experience examining and investigating fires involving similar motors, he testified that there are a number of different forms of thermal protection that could have been incorporated into the design of the motor, including different kinds of thermal cut-off switches or more robust impedance protection on the windings, that would have caused the pump to fail safely rather than dangerously.

As demonstrated below, Mr. Flaherty's opinions are admissible. Mr. Flaherty is qualified and formed his well-grounded opinions, which certainly fit the case, by using the scientific method as outlined under the National Fire Protection Association 921, a Guide for Fire and Explosion Investigations, which has been deemed a reliable method for fire investigations by numerous district courts in this Circuit and across the country. Defendants perceived flaws in Mr. Flaherty's investigative method or conclusions are, at best, topics for cross-examination at trial. Mr. Flaherty should be permitted to testify to the opinions expressed in his report by this Honorable Court.

II. RELEVANT FACTUAL BACKGROUND

Between November 1 and 3 2019, Plaintiffs, Jeanette Scicchitano-Smith and Alexander Smith, were at their vacation home in Maryland. *See* Exhibit A, Dep. Tr. Alexander Smith, at 36:20-37:1, 48:6-8. Mr. Smith returned home on Sunday, November 3, 2019, around 7 p.m. and discovered smoke and soot damage throughout his home. *Id.* at 41:2-43:16, 52:4-9. He followed the smoke and soot damage to his basement where he discovered the fire-damaged and melted remains of his six-gallon fish aquarium tank located on a desk. *Id.* at 43:17-44:17, 67:22-68:7; *see*

also Exhibit B, Robert Buckley Report, at 7 (Photograph 1 and 2).

During its lifetime, the incident aquarium pump was sparsely used. Mr. Smith purchased the subject pump motor along with the Marineland six-gallon Eclipse aquarium in 2002 or 2003. Exhibit A, Dep. Tr. Alexander Smith, at 27:14-28:19. Initially after purchasing the aquarium, Mr. Smith used it for as little as “six months to maybe a year” before upgrading to a bigger tank. *Id.* at 102:15-104:4. Thereafter, he only used the aquarium / pump as a “quarantine tank” to treat sick fish. *Id.* at 29:6-11, 103:19-104:4. He used it to treat two sick, freshwater Peppered Corydoras a few weeks to a month before the fire. *Id.* at 35:7-16, 36:3-12. Mr. Smith could only recall one other time from the time he purchased the tank until the time before the fire that he used the aquarium / pump as a quarantine tank. *Id.* at 104:9-18, 106:4-9, 102:8-14. Overall, Mr. Smith calculated that from the time he purchased the aquarium kit until the day of the fire, the pump was in use a total of “two years ... nothing more than that.” *Id.* at 105:8-15.

There is no evidence that the pump was damaged, misused, or used in an unintended manner before the fire. When Mr. Smith was not using the aquarium / pump, he kept it on a shelf in a closet. *Id.* at 101:20-102:4, 104:9-21. He did not experience any problems with the pump prior to the fire. *Id.* at 31:10-17, 38:23-39:8. There was no damage to any part of the pump prior to the fire. *Id.* at 31:18-22.

About an hour after Mr. Smith arrived home, he called the fire department to request they confirm the fire was out. *Id.* at 47:16-24. The West Grove Fire Department and the Chester County Fire Marshal arrived on scene. *Id.* at 49:12-52:3.

Fire Marshal, John Weer, investigated the cause of this fire. Exhibit C, Chester County Fire Marshal’s Report. Fire Marshal Weer completed a scene examination, interviewed Mr. Smith, and analyzed burn patterns. *Id.* He concluded the area of origin was located in the basement at the top

of a fish tank sitting on a desk. *Id.* at 7. Within the area of origin, he identified two components of the aquarium as possible “ignition sources” – the aquarium pump and heater. *Id.* He did not endeavor to determine which ignition source caused the fire. Once he classified the fire as “accidental”, his investigation was completed and he left the evidence at the scene for other forensic investigators. Exhibit D, Dep. Tr. John Weer at 30-32.

Plaintiffs retained fire investigator Robert Buckley, C.F.E.I., a well-qualified private investigator specializing in fire and cause investigations, to inspect the scene and determine the origin and cause of this fire. *See* Exhibit B, Report of Robert Buckley. After examining and documenting the scene, interpreting burn patterns, and conducting witness interviews, Mr. Buckley determined the fire originated on the top of the fish aquarium tank. *Id.* at 4-5. He identified three possible ignition sources for the fire: (1) a pump motor, (2) an aquarium heater and (3) a light. *Id.* at 5. After ruling out each potential source of ignition within the defined area of origin, Mr. Buckley concluded that the fire originated at the pump motor. *Id.* at 5-6.

Plaintiffs also retained electrical engineer Christoph J. Flaherty, P.E. Mr. Flaherty graduated with Bachelor of Science in Physics from the Naval Academy in 1992 and a Masters in Electrical Engineering from Tufts University in 1994. *See* Exhibit E, Christoph Flaherty CV. He thereafter embarked on a career in the Navy as a Nuclear Propulsion Engineer between 1994 and 2001. *Id.* In 2004, Mr. Flaherty began working as a forensic engineer investigating the cause and origin of product failures and electric failures. *Id.* Between 2006 and 2012, in addition to working as a forensic engineer, Mr. Flaherty was a member of the Electric Engineering Faculty at the Naval Academy, teaching subjects including “electrical motors” and “power supply design.” *Id.* He has extensive experience investigating fires caused by consumer products including “electric motor operated pumps” – such as the one at issue in this case. *Id.*

Mr. Flaherty reviewed, among others, photographs from the fire scene, the deposition testimony of witnesses, and the items and x-rays of the items on top of the aquarium at the time of the fire: (1) pump motor, (2) heater and (3) light. *See* Exhibit F, Report of Christoph J. Flaherty, P.E. He determined the fire originated at the pump motor and eliminated the heater and light as possible causes. *Id.* at 10. Mr. Flaherty found evidence of electrical arcing on the pump's motor windings, which is undisputable physical evidence that the pump motor suffered an internal failure that caused it to overheat. *Id.* at 8. Mr. Flaherty opines that the incident pump motor should have been designed with a thermal protection device, which would have prevented this fire by de-energizing the pump motor after the motor's windings began to overheat. *Id.* at 8-9.

Despite the fact that Defendants retained forensic experts to attend and participate in both the scene inspection and the examination of the evidence removed from the scene, Defendants have not produced any expert reports disputing the opinions of Mr. Flaherty or otherwise disputing that the fire originated in their pump motor, was caused by a defect or malfunction of the pump motor, or that the subject motor could have implemented a thermal protection device. Defendants' expert opines only that the subject motor complied with voluntary UL testing standards.

Defendants move to preclude Mr. Flaherty. For the reasons discussed below, Mr. Flaherty's testimony is admissible and Defendants' motion must be denied.

III. LEGAL STANDARD

Under Federal Rule of Evidence 702, "[a] witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.”

Fed. R. Evid. 702.

In *Daubert v. Merrell Dow Pharmaceuticals* the Supreme Court described the district court’s role under Rule 702 as gatekeepers of evidence and scientific testimony, “ensur[ing] that any and all scientific testimony or evidence is not only relevant, but reliable.” *Dalton v. McCourt Elec. LLC*, 112 F. Supp. 3d 320, 324 (E.D. Pa. 2015) (citing *Daubert*, 509 U.S. 579 (1993)). An expert’s opinion is reliable if it is based in sound methodology and technique. *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 742 (3d Cir. 1994).

A “district court must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable” *Dalton*, 112 F. Supp. 3d 320, 325 (E.D. Pa. 2015) (quoting *Kumho Tire v. Carmichael*, 526 U.S. 137 at 152 (1999)). Notably, this evaluation does not include an analysis of the expert’s conclusion. Rather, the focus remains on the principles and methodology the expert employed. *Id.* at 744. If the principles and methodologies are reliable, then its conclusions should be scrutinized by the fact finder. *Id.*

[T]he evidentiary requirement of reliability is lower than the merits standard of correctness. As long as an expert’s scientific testimony rests upon ‘good grounds, based on what is known,’ it should be tested by the adversary process—competing expert testimony and active cross examination, rather than excluded from juror’s scrutiny for fear that they will not grasp its complexities or satisfactorily weigh its inadequacies.

USAA Cas. Ins. Co. v. Metro. Edison Co., No. 1:12-CV-1178, 2014 WL 3943706, at *4 (M.D. Pa. Aug. 12, 2014) (citing *United States v. Mitchell*, 365 F. 3d 215, 244 (3d Cir. 2004)). Regarding this preference, “the Third Circuit has emphasized that not only do the Rules of Evidence generally ‘embody a strong preference for admitting any evidence that may assist the trier of fact,’ but Rule 702 specifically ‘has a liberal policy of admissibility.’” *Dalton*, 112 F. Supp. 3d at 325 (citing *Pineda v. Ford Motor Co.*, 520 F.3d 237, 243 (3d Cir.2008)).

IV. ARGUMENT

Mr. Flaherty's opinions are admissible and Defendants' arguments otherwise are meritless.

A. Mr. Flaherty's opinions are admissible and consistent with Plaintiff's burden of proof at trial

The manner in which Mr. Flaherty reached his expert opinions is based on a reliable methodology and, therefore, his opinions are admissible. His opinions, further, are consistent with Plaintiff's burden of proof of trial.

i. Mr. Flaherty's method was reliable as he adhered to the principles of the scientific method and NFPA 921 to reach his opinions

Mr. Flaherty opines that a defect in the subject motor caused the fire and that the subject motor was defective in design. To reach these opinions, Mr. Flaherty followed the scientific method as outlined in National Fire Protection Association 921 – a Guide for Fire and Explosion Investigations. The scientific method, as outlined in NFPA 921, has been determined by a number of district courts in this circuit to be a reliable method to determine the cause of a fire. *See, e.g., Hoang v. Funai Corp.*, 652 F. Supp. 2d 564, 567 (M.D. Pa. 2009); *Allstate Ins. Co. v. Hamilton Beach/Proctor-Silex, Inc.*, No. 2:06CV1186, 2008 WL 3891259, at *5 (W.D. Pa. Aug. 19, 2008); *State Farm Fire & Cas. Co. v. Hartman Contractors*, No. CV 14-6535, 2017 WL 2180292, at *7 (E.D. Pa. May 18, 2017).

Mr. Flaherty performed the same methodology to reach an opinion on the cause of a fire in a recent case and his testimony was deemed reliable and admissible for purposes of Rule 702. *Allstate Ins. Co. v. LG Elecs. USA, Inc.*, No. CV 19-3529, 2021 WL 2875603, at *4 (E.D. Pa. July 8, 2021).

Under the scientific method in this context, to determine the cause of a fire, an investigator

is to define the problem, collect data, analyze data, develop hypotheses, test the hypotheses, and select a final hypothesis. *See* Exhibit G, NFPA 921 Provisions, § 4.3 and Figure 4.3 (general method to fire investigation). Developing and then testing hypotheses are the key steps in reliably determining the cause of a fire and are accomplished using inductive and deductive reasoning:

4.3.5 Develop a Hypothesis (Inductive Reasoning). Based on the data analysis, the investigator produces a hypothesis, or hypotheses, to explain the phenomena, whether it be the nature of fire patterns, fire spread, identification of the origin, the ignition sequence, the fire cause, or the causes of damage or responsibility for the fire or explosion incident. This process is referred to as inductive reasoning. These hypotheses should be based solely on the empirical data that the investigator has collected through observation and then developed into explanations for the event, which are based upon the investigator's knowledge, training, experience, and expertise.

4.3.6 Test the Hypothesis (Deductive Reasoning). The investigator does not have a valid or reliable conclusion unless the hypothesis can stand the test of careful and serious challenge. Testing of the hypothesis is done by the principle of deductive reasoning, in which the investigator compares the hypothesis to all known facts as well as the body of scientific knowledge associated with the phenomena relevant to the specific incident. Testing of a hypothesis should be designed to disprove, or refute, the hypothesis. This may also be referred to as falsification of the hypothesis. If the hypothesis is refuted or not supported, it should be discarded and alternate hypotheses should be developed and tested.

See Exhibit G, NFPA 921 Provisions, §§ 4.3.5 and 4.3.6.

In practice, the scientific method involves using the data collected to hypothesize different reasonable possible causes of the fire and to then methodically rule them out based on the evidence known to the investigator. If the investigator is left with one reasonable possible hypothesis, the investigator may opine that this is the probable cause of the fire. The scientific method does not require an investigator “prove” his hypothesis. Rather, as long as the “likelihood of the hypothesis being true is greater than 50 percent” the investigator can determine that the hypothesis is the “probable” cause of a fire and express that opinion with reasonable scientific certainty. *See* Exhibit G, NFPA 921 Provisions, §§ 4.5.1 and 4.5.2. Thus, an investigator that can rule out all other

reasonable possible causes – save one – has reliably determined the cause of a fire under Rule 702.¹

This is exactly the manner in which Mr. Flaherty reached his opinion on the cause of the fire here. He examined photographs of the scene, the Fire Marshal's report, the testimony of relevant witnesses, and the physical evidence and hypothesized various ignition sources within the area of the fire's origin on the top of the aquarium: (1) pump motor, (2) heater and (3) light. *See Exhibit F, Report of Christoph J. Flaherty*, at 7-8. Per Mr. Flaherty, the light was unplugged, meaning it could not have caused the fire. *Id.* at 7. The heater was largely intact and suffered damage consistent with being attacked from the fire, meaning it too could not have caused the fire. *Id.* In contrast, the pump motor showed melting and beading on the windings and large amounts of heat damage on interior surfaces of the pump housing. *Id.* at 8. Further, Mr. Flaherty noted that Mr. Smith testified that he used the pump motor in an aquarium, as was the product's intended purpose, and that it was not damaged or experiencing any issues. *Id.* at 3-4. Mr. Flaherty further noted Mr. Smith's testimony that the home was not experiencing any electrical issues before the fire. *Id.* at 2-3. Accordingly, Mr. Flaherty opines that the subject pump motor failed due to an unidentified defect that caused it to overheat and fail. *Id.* at 10.

Additionally, Mr. Flaherty noted that the subject pump motor lacked adequate thermal protection. *Id.* at 8. Mr. Flaherty explained that:

Thermal protection would be a device or design that a motor designer and manufacturer include in the pump. So in this case, we're talking about pumps, but more generally this could be true of electric motors, any electric motors like those that run fans. Thermal protection is a device or design feature that is intended to

¹ *See, e.g., Mut. Ben. Ins. Co. v. Kaz, Inc.*, No. 1:12-CV-2108, 2014 WL 671445, at *3 (M.D. Pa. Feb. 20, 2014); *Cnty. Ass'n Underwriters of Am., Inc. v. Rhodes Dev. Grp. Inc.*, No. 1:09-CV-0257, 2013 WL 818596, at *11 (M.D. Pa. Mar. 5, 2013); *Hoang*, 652 F. Supp. 2d at 568; *State Farm Fire & Cas. Co.*, 2017 WL 2180292, at *7; *Allstate Ins. Co. v. Anderson*, No. CV 15-2651, 2016 WL 2939506, at *3 (E.D. Pa. May 20, 2016); *Dalton*, 112 F. Supp. 3d at 329.

limit or stop the operation of the motor should it overheat, before it gets hot enough to ignite a fire.

Exhibit H, Christoph Flaherty Dep. Tr., at 21:5-14.

Consistent with NFPA 921 and the scientific method's use of inductive and deductive reasoning, Mr. Flaherty performed cognitive testing to determine whether different types of thermal protection could have been used with the subject motor to protect against overheating. Mr. Flaherty considered devices such as thermal cutoff switches, that shut off a motor if it reaches a set temperature, and impedance protection, which ensures that the windings of the motor are sufficiently resistive to heat. *See id.* at 21:25-22:11, 25:23-26:14.

Mr. Flaherty determined that the subject motor could have used more robust impedance protection. Impedance protection is widely used in motors. *See, e.g., id.* at 21:25-24:9. In fact, the subject motor had a certain level of impedance protection. However, the fact that the motor still overheated and failed is evidence that such impedance protection was inadequate to handle temperatures sustained upon normal use of the product. *Id.* at 25:9-22. Accordingly, Mr. Flaherty opines that more robust impedance protection would have offered better resistance to overheating and would have prevented the subject fire.

Similarly, Mr. Flaherty determined that a thermal cutoff switch could have been used with the subject pump motor. Over the course of his career, which included teaching courses on electric motors at the Naval Academy, Mr. Flaherty has examined a number of products that have similar sized motors compared to the subject pump motor, including those found in other pumps and bathroom exhaust ceiling fans that have incorporated a thermal cutoff switch into the motor. *Id.* at 51:3-14. He testified that there are thermal cutoff switches in other products that are 1 centimeter long and 2-3 centimeters in diameter that are small enough to fit on the subject motor. *Id.* at 33:24-34:5. He further testified, using the product's design drawings, exactly where he opines the cutoff

switch could have been placed on the windings: it could be placed on the top, bottom, or side of the windings and would be electrically connected between the windings and the power cord. *Id.* at 36:7-37:25, 40:19-44:5.

Accordingly, Mr. Flaherty opines that the subject pump motor was defectively designed in that it failed to incorporate adequate thermal protection. *See* Exhibit F, Report of Christoph J. Flaherty, at 8-10. As shown above, these opinions are properly supported by Mr. Flaherty's knowledge of the design of the subject pump motor and his experience with the design of similar generic motors and the safety devices available to be incorporated into them.

ii. Mr. Flaherty's opinions are consistent with Plaintiff's burden of proof at trial

Plaintiffs have multiple distinct strict liability claims and Mr. Flaherty's opinions are relevant and will assist the trier of fact in understanding and evaluating these claims.

The first, a manufacturing defect claim, stems from the catastrophic failure of the product despite its intended and foreseeable use. Under malfunction theory, "Plaintiffs are not required to prove the precise nature of the alleged defect." *Dalton*, 112 F. Supp. 3d at 327-28. "Under the malfunction theory of product liability, the plaintiff must produce (1) evidence of the occurrence of a malfunction, (2) evidence eliminating abnormal use, and (3) evidence eliminating reasonable secondary causes for the malfunction." *Id.* (quotations and citations omitted). Importantly, "[e]vidence supporting this theory relieves the plaintiff from the obligation to pinpoint the precise defect, and indicates that the alleged defect both caused the injury and existed when the product left the manufacturer's control." *Id.*

Mr. Flaherty's testimony will assist Plaintiffs to demonstrate that the product was never altered, used for its intended purpose and in a foreseeable manner at all times, failed suddenly, catastrophically and without warning and burst into flames without notice, and that all reasonable,

secondary causes of the product's malfunction have been eliminated, and that the product caused more than \$500,000 in property damage as a result.

The second distinct strict products liability theory advanced by Plaintiffs is a design defect claim premised on the Consumer Expectations Test. Mr. Flaherty's testimony will assist Plaintiffs to demonstrate that the aquarium pump at issue was used for its intended purpose and in a foreseeable manner, yet performed more dangerously than an ordinary consumer would expect when it erupted in flames suddenly and without warning after roughly two years of use.

The third strict products liability theory advanced by Plaintiffs is a design defect claim premised on the Risk-Utility Test. In support thereof, Mr. Flaherty's testimony will assist Plaintiffs to establish that a feasible, safer alternative pump motor design existed and that, if used, the safer design would have prevented the product from bursting into flames suddenly and without warning, as occurred in this case.

Accordingly, Mr. Flaherty's opinions are relevant and will assist the trier of fact in evaluating Plaintiffs' claims.

B. Defendants do not raise credible arguments supporting the preclusion of Mr. Flaherty

Defendants offer a number of arguments in support of their attempt to preclude Mr. Flaherty. None have merit.

i. Mr. Flaherty has a valid basis to opine that the product was defective because it lacked thermal protection

Defendants' primary issue with Mr. Flaherty's opinion is that they do not believe he has stated a sufficient basis for his opinion that the subject pump motor was defective because it lacked adequate thermal protection. As shown above, Mr. Flaherty has a valid basis to opine that such thermal protection would have been a safer design that is based, not only on his experience

and cognitive testing, but also on the fact that such thermal protection is widely used in the industry. Mr. Flaherty's opinion is not novel.

Thermal cutoff switches are existing, ubiquitous products that have been used for decades and are commonly found in motors of comparable size and function. Exhibit H, Christoph Flaherty Dep. Tr., at 51:3-14. Defendants admit that they manufacture other motors with thermal cutoff switches and do not offer any argument, expert or otherwise, that the subject motor could not have been outfitted with a similar switch or that doing so would have been cost prohibitive. Exhibit I, Kevin Elam Dep. Tr., at 25:8-26:14; Exhibit J, Joseph Flora Dep. Tr., at 33:20-34:6.

Defendants half-heartedly attempt to cast doubt on the efficacy of thermal cutoff switches, despite using them on their products, by pointing to fires that Mr. Flaherty has investigated where a motor overheated despite having a thermal cutoff switch. However, Defendants take Mr. Flaherty's testimony out of context. While Mr. Flaherty admits that "thermal protectors can fail", he testified that this occurs only when they are installed or manufactured incorrectly. Exhibit H, Christoph Flaherty Dep. Tr., at 58:16-19. This fact does nothing to undermine his opinion that a *properly* manufactured and installed thermal cutoff device would function as intended to shut off the motor before it could overheat and prevent the subject fire.

Similarly, impedance protection is widely used in comparable products. *Id.* at 21:25-24:9. The subject motor had impedance protection and Defendants do not offer any argument, whether expert or otherwise, that the subject motor's winding could not have been outfitted with a higher level of impedance protection or that doing so would have been cost prohibitive.

Because Mr. Flaherty has a basis for his opinion and reached his opinion using a reliable methodology, his opinion is admissible. Case law from the Supreme Court and Third Circuit make clear that the proper method to attack the sufficiency of the basis of an opinion is through

cross-examination. *See, e.g., Daubert*, 509 U.S. at 596 (“Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.”); *Stecyk v. Bell Helicopter Textron, Inc.*, 295 F.3d 408, 414 (3d Cir.2002) (“Rule 705, together with Rule 703, places the burden of exploring the facts and assumptions underlying the testimony of an expert witness on opposing counsel during cross-examination.”); *Kannankeril v. Terminix Int’l, Inc.*, 128 F.3d 802, 807 (3d Cir. 1997) (“The analysis of the conclusions themselves is for the trier of fact when the expert is subjected to cross-examination.”).

Defendants’ argument otherwise rests primarily on *Booth v. Black & Decker, Inc.*, 166 F. Supp. 2d 215, 221 (E.D. Pa. 2001). However, *Booth* is not precedential and must be considered in context. *Booth* was heavily influenced by the (at the time) recent Third Circuit case of *Oddi v. Ford Motor Co.*, 234 F.3d 136, 146 (3d Cir. 2000). *Oddi* was a crashworthiness case where an expert attempted to testify that design changes he proposed to a bread truck’s bumper would have prevented the vehicle from ramping off a guardrail it had struck. *Id.* The proposed changes involved reinforcing the bumper at certain places, welding steel brackets to the bumper in certain places, or using different shapes of bumpers. *Id.* at 147–48. The Third Circuit precluded the expert from offering such testimony because he had no basis to opine that these changes would have prevented the bread truck from ramping off the guardrail, as he did not test any of the proposed changes. *Id.* at 157. However, *Oddi* did not purport to rule that an expert can never base his opinion off experience and background alone. *Id.* at 158 (“[T]here may be some circumstances where one’s training and experience will provide an adequate foundation to admit an opinion and furnish the necessary reliability to allow a jury to consider it.”).

In contrast to *Oddi*, Mr. Flaherty *does* have a basis to determine that the thermal cutoff

switch and impedance protection would have prevented the motor from overheating. Unlike the proposed design changes in *Oddi*, these are tried and tested on the market products that motor designers and manufacturers – including Defendants – have incorporated into comparable motors for decades and have been proven to work. Further, *Oddi* involved the complex physics of a vehicle crash and the Third Circuit criticized the expert for failing to account for how the bumper, containing the proposed alternative design, would have reacted when striking the guardrail. *Id.* Here, Mr. Flaherty is opining about far simpler design changes. With a cutoff switch, the motor simply shuts off after it reaches a set temperature, preventing it from overheating. With increased impedance protection, the motor’s windings are simply more capable of carrying heat, preventing arcing as the motor reaches higher temperatures.

Booth did not appreciate these differences and read *Oddi* as more general authority that an expert must test their hypothesis. *Booth*, 166 F. Supp. 2d at 221. What *Booth* failed to appreciate, perhaps because such evidence was not before the court, is that cognitive testing using inductive and deductive reasoning *is* testing a hypothesis for forensic investigators like Mr. Flaherty under NFPA 921 and the scientific method. Under NFPA 921, physical testing is not required. *See, e.g., Allstate Ins. Co.*, 2021 WL 2875603, at *4 (“NFPA standards do not require physical experimentation.”). Moreover, physical testing of these products is unnecessary as they have stood the tests of the marketplace and are still incorporated into comparable electric motors today.

Accordingly, *Oddi* and *Booth* are distinguishable and neither support the preclusion of Mr. Flaherty.

ii. Mr. Flaherty properly ruled out all causes of the motor failure other than a defect

Defendants next argue that Mr. Flaherty’s methodology is unreliable because they allege

he was unable to rule potential causes of the motor failure that they allege are not defects. Each alleged potential cause of the motor failure raised by Defendants has either been ruled out or is in fact a result of a defect. Plaintiffs are not required to narrow down the failure of the motor to a single defect. Plaintiffs can support their claim with testimony that there were multiple potential failure modes that each implicate a defect.²

Defendants first allege that Mr. Flaherty failed to rule out whether the motor's "potting" – a protective case around the motor to prevent water from contacting the motor – could have been cracked, exposing the motor to water and causing it to fail. As an initial matter, there is no evidence that the potting was cracked prior to the fire to support such a hypothesis. Exhibit H, Christoph Flaherty Dep. Tr., at 72:3-6. However, even assuming this is how the fire occurred, the only possible explanation based on the evidence collected is if such cracks were caused by a defect. There is no evidence that the pump was damaged, misused, or used in an unintended manner before the fire by the Smiths. Mr. Smith calculated that from the time he purchased the aquarium kit until the day of the fire, the pump was in use a total of "two years ... nothing more than that." See Exhibit A, Dep. Tr. Alexander Smith, at at 105:8-15. When Mr. Smith was not using the aquarium / pump, he kept it on a shelf in a closet. *Id.* at 101:20-102:4, 104:9-21. He did not experience any problems with the pump prior to the fire. *Id.* at 31:10-17, 38:23-39:8. There was no damage to any part of the pump prior to the fire. *Id.* at 31:18-22. Accordingly, such cracks could have only occurred due to a defect in the potting.

² See, e.g., *Allstate Ins. Co.*, WL 2875603, at *4 ("Mr. Flaherty ruled out all other potential causes of the fire and determined that there were two potential causes, both of which, if they were determined to be the actual cause, would be the result of a manufacturing defect. Therefore, Plaintiff need not show which of those two potential causes occurred, because either one would impose liability and Mr. Flaherty's opinion will be helpful in demonstrating the elements which Plaintiff is required to prove under malfunction theory.").

Defendants next allege that Mr. Flaherty failed to rule out excessive current from a power surge at Plaintiffs' home. Plaintiffs' obligation is to rule out reasonable secondary causes of the product's malfunction in their case in chief. Here, there is no evidence whatsoever that a power surge preceded the fire. As Defendants admit, and as noted in Mr. Flaherty's report, Plaintiffs experienced no electrical issues at their home prior to the fire. *See* Exhibit F, Report of Christoph J. Flaherty, at 3. After the fire, only the breaker for the aquarium was tripped. *See* Exhibit A, Dep. Tr. Alexander Smith, at 110:13-20.

Defendants presented no evidence during discovery of any power surge that could have affected the property and none was discovered by any of the professional fire investigators or engineers from either the public or private sector. There is no evidence of any lightning storms or strikes in the area, contemporaneous public utility work in the area, contemporaneous power outages, electrical problems at the home after the fire, any other electrical circuit breakers in the home tripping (except the one that protected the circuit that powered the aquarium pump motor), or any other reason to suspect that a power surge could have affected the property and contributed to the cause of the product's malfunction. A power surge is not a "reasonable secondary cause" that must be eliminated in this context.

Regardless, if Defendants somehow raise this as a possibility at trial during their case, they will be forced to admit that the ordinary operation of the aquarium pump motor during a power surge is a foreseeable misuse of the product that should not cause it to fail dangerously, which infers that the product was defective in manufacturer or design because it did fail dangerously. Moreover, if the jury believes the product failed dangerously in a fire condition as a result of the product's ordinary and foreseeable use during a power surge, the jury can find that the product performed less safely than an ordinary consumer would expect (indeed, less safely

than every other product in the house - only the aquarium erupted into flames here) and return a verdict in favor of Plaintiffs.

Finally, Defendants argue that Mr. Flaherty failed to rule out a locked rotor as a potential cause of the failure. It is true, a locked rotor could have caused the motor's failure. However, what Defendants do not state, is how the rotor of a motor encased in potting could have become locked in a manner that was not the result of a defect. Again, there is no evidence that the pump was damaged, misused, or used in an unintended manner before the fire by the Smiths. Thus, the only viable explanation for a locked rotor involves a defect.

Accordingly, Mr. Flaherty's testimony is not inadmissible for failing to rule out potential causes of the motor's failure that are related to defects in the product.

iii. Mr. Flaherty analyzed the design of the subject motor

Defendants further make the argument that Mr. Flaherty "did nothing to analyze the design of the Pump Motor" and should therefore be precluded. This is not true. Defendants ignore that Mr. Flaherty examined the remains of the pump motor as well as its schematic drawings. *See* Exhibit F, Report of Christoph J. Flaherty, at 7-8. Defendants further fault Mr. Flaherty for not examining other pump motors but ignore the fact that he testified that he was familiar with the design of motors of comparable size and function used in other products. *See* Exhibit H, Christoph Flaherty Dep. Tr., at 51:3-14. As such, Defendants' argument does not warrant preclusion of Mr. Flaherty.

iv. Mr. Flaherty has a valid basis for his opinion that the varnish on the motor's windings could have degraded over time

Finally, Defendants take issue with Mr. Flaherty's opinion that the varnish on the windings could have degraded over time. To be clear, Mr. Flaherty testified that degraded varnish is just one of the potential failure modes of the motor and does not specifically opine that the

varnish degraded here. *See* Exhibit H, Christoph Flaherty Dep. Tr., at 73:19-25. Varnish is a thin layer of insulating material put on windings to prevent overheating. *Id.* at 74:1-8. Due to the damage caused by the fire, it was not possible to determine the sufficiency of the varnish on the windings prior to the fire. *Id.* at 75:24-76-6. As such, Mr. Flaherty could not rule out the possibility that varnish could degrade over time if there was an issue with its thickness or chemical makeup. *Id.* at 97:6-98-4. This opinion is based on his examination of the remains of the motor and his education and experience. Because Mr. Flaherty's opinion has a valid basis and was reached using a reliable methodology, it is admissible and Defendants' Motion should be denied.

VI. RELIEF REQUESTED

For all of the foregoing reasons, Plaintiffs respectfully request that this Honorable Court deny Defendants' Motion to Exclude the Expert Opinions of Christoph J. Flaherty, P.E.

de LUCA LEVINE LLC

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